



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/089,120	03/22/2002	Yutaka Tokiwa	11283-018001	9082

26211 7590 06/16/2003

FISH & RICHARDSON P.C.
45 ROCKEFELLER PLAZA, SUITE 2800
NEW YORK, NY 10111

EXAMINER

AFREMOVA, VERA

ART UNIT

PAPER NUMBER

1651

DATE MAILED: 06/16/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.
10/089,120

Applicant(s)
Tokiwa

Examiner
Vera Afremova

Art Unit
1651



-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136 (a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on May 30, 2003
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11; 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-18 is/are pending in the application.
- 4a) Of the above, claim(s) 4-18 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-3 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claims _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☒ Acknowledgement is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- *See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgement is made of a claim for domestic priority under 35 U.S.C. § 119(e).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgement is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- | | |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) Paper No(s). _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449) Paper No(s). _____ | 6) <input type="checkbox"/> Other: |

Art Unit: 1651

DETAILED ACTION

Election/Restriction

Applicant's election without traverse of the Group I invention drawn to a method for degrading polylactide resins with actinomycetes and election of the species of actinomycetes such as representatives of *Saccharotrix* in the Paper No. 6 filed 5/30/2002 is acknowledged.

Claims 4-18 have been withdrawn from further consideration pursuant to 37 CFR 1.142(b) as being drawn to a nonelected invention drawn to a preparation containing actinomycetes (claim 18) and to nonelected species of actinomycetes in the method for degrading polylactide resins with actinomycetes (claims 4-17), there being no allowable generic or linking claim. Election was made without traverse in Paper No. 6 filed 5/30/2003.

Claims 1-3 are under examination in the instant office action.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless -

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1 and 2 are rejected under 35 U.S.C. 102(b) as being anticipated by US 5,925,556 [IDS-AA] or US 6,066,492 [A].

Claims are directed to a method for degrading polylactide resins wherein the polylactide resins are degraded by an actinomycete belonging to a microbial genus *Saccharothrix*.

Art Unit: 1651

The cited patents teach methods for degrading polylactide resins wherein the polylactide resins are degraded by microorganisms which are actinomycetes belonging to a microbial genus *Saccharothrix*. For example: see US 5,925,556 [IDS-AA] at col. 2, lines 50-51, col. 8, lines 44-48 and especially at col. 5, line 33. For example: US 6,066,492 [A] at col. 2, lines 55-60, col. 8, lines 32-35 and especially at col. 5, line 43.

The claimed invention is considered to be anticipated by the cited patents because both cited patents clearly teach that representatives of the genus *Saccharothrix* degrade polylactide resins and thus, they teach the method as claimed.

Claim Rejections - 35 U.S.C. § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1-3 are rejected under 35 U.S.C. 103(a) as being unpatentable over US 5,925,556 [IDS-AA], US 6,066,492 [A], JP 9-11-046755 [IDS-AN], Williams D.F. [U] and ATCC Catalogue [V].

Claims are directed to a method for degrading polylactide resins wherein the polylactide resins are degraded by an actinomycete belonging to a microbial genus *Saccharothrix*. Some claims are further drawn to the actinomycete belonging to the microbial genus *Saccharothrix*

Art Unit: 1651

being *Saccharothrix flava*, *Saccharothrix coerileofusca*, *Saccharothrix longispora*, *Saccharothrix australiensis*, *Saccharothrix mutabilis subsp. mutabilis*, *Saccharothrix aerocolonigenes*, *Saccharothrix syringae*, and other representatives of the microbial genus *Saccharothrix*.

The cited US 5,925,556 [IDS-AA] and US 6,066,492 [A] teach methods for degrading polylactide resins wherein the polylactide resins are degraded by microorganisms which are actinomycetes belonging to a microbial genus of *Saccharothrix* as well as microorganisms which are actinomycetes belonging to all other genera of actinomycetes (tables 1-5). But they are missing disclosure of microbial species within the microbial genus of *Saccharothrix*. However, the ATCC catalogue is relied upon for the disclosure of a large list of known and available representatives of the microbial genus *Saccharothrix* including *Saccharothrix* being *Saccharothrix flava*, *Saccharothrix coerileofusca*, *Saccharothrix longispora*, *Saccharothrix australiensis*, *Saccharothrix mutabilis subsp. mutabilis*, *Saccharothrix aerocolonigenes*, *Saccharothrix syringae*, and others (see pages 314-315).

JP 9-11-046755 [IDS-AN] discloses a method for degrading polylactide resins wherein the polylactide resins are degraded by an actinomycete belonging to a microbial genus *Actinomadura* (See English abstract). But it is lacking disclosure that actinomycetes which are taxonomically assigned to or identified as belonging to the microbial genus *Saccharothrix* are capable to degrade polylactide resins.

Art Unit: 1651

However, the reference by Williams D.F. [U] teaches an enzymatic degradation of polylactide resins by various enzymes including enzymes produced by actinomycetes identified as belonging to the microbial genus *Streptomyces* (table 1) .

The ATCC catalogue is relied upon to demonstrate that the microbial group of actinomycetes have been frequently reclassified and that the representatives of the genus of the taxonomic group *Saccharothrix* have been previously assigned to the genus of *Streptomyces* and to the genus of *Actinomadura*. The ATCC catalogue is also relied upon for the disclosure of a large list of known and available representatives of the microbial genus *Saccharothrix* including *Saccharothrix* being *Saccharothrix flava*, *Saccharothrix coerileofusca*, *Saccharothrix longispora*, *Saccharothrix australiensis*, *Saccharothrix mutabilis subspl. mutabilis*, *Saccharothrix aerocolonigenes*, *Saccharothrix syringae*, and others (see pages 314-315).

Therefore, it would have been obvious to one having ordinary skill in the art at the time the claimed invention was made to practice a method for degrading polylactide resins by using various microbial species of the microbial genus of *Saccharothrix* with a reasonable expectation of success in degrading polylactide resins because the polylactide resins are degraded by microbial enzymes {Williams D.F.} and the representatives of the genus *Saccharothrix* (previously *Streptomyces* and *Actinomadura* as demonstrated by ATCC catalogue) possess the enzymes which degrade polylactide resins {US 5,925,556, US 6,066,492, JP 9-11-046755, Williams D.F.}. One of skill in the art is free to select actinomycete representatives available in the prior art which is reasonably expected to degrade polylactide resins. Although the

Art Unit: 1651

representatives of various genera of actinomycetes have been reclassified, all genera of actinomycetes have microbial representatives or microbial species which degrade polylactide resins as taught US 5,925,556 and US 6,066,492. Thus, it would have been obvious to one having ordinary skill in the art at the time the claimed invention was made to use any representatives of the genus *Saccharothrix* from the ATCC Catalogue in the method of the cited US 5,925,556 [IDS-AA], US 6,066,492 [A], JP 9-11-046755 and/or Williams D.F. for the expected benefit in degrading polylactide resins.

Thus, the claimed invention as a whole was clearly prima facie obvious, especially in the absence of evidence to the contrary.

The claimed subject matter fails to patentably distinguish over the state art as represented by the cited references. Therefore, the claims are properly rejected under 35 USC § 103.

The instant specification discloses a long list of particular strains identified as *Saccharothrix* wherein the particular strains are demonstrated as capable to degrade polylactide resins (page 7, table 2). However, it is not clear whether the disclosed strains are the novel strains and/or whether there would be any differences in the methods for degrading polylactide resins between the disclosed strains and the other strains available from the bacterial culture collections.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Vera Afremova whose telephone number is (703) 308-9351. The examiner can normally be reached on Monday to Friday from 9:00 to 5:30.

Art Unit: 1651

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Michael Wityshyn, can be reached on (703) 308-4743. The fax phone number for this Group is (703) 308-4242.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the Group receptionist whose telephone number is (703) 308-0196.

Vera Afremova

Art Unit 1651

June 13, 2003

VERA AFREMOVA

PATENT EXAMINER

A handwritten signature in black ink, appearing to read "V. Afremova", with a long horizontal flourish extending to the right.